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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,332	03/24/2005	Yasuo Nishi	KOY-0048	8930

23413 7590 08/22/2007
CANTOR COLBURN, LLP
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BLOOMFIELD, CT 06002

EXAMINER

MCPHERSON, JOHN A

ART UNIT	PAPER NUMBER
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1756

MAIL DATE	DELIVERY MODE
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08/22/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/529,332

Applicant(s)

NISHI ET AL.

Examiner

John A. McPherson

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) 9-15 and 22-55 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 16-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/05, 2/07 and 7/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-8 and 16-21 in the reply filed on 6/12/07 is acknowledged. The traversal is on the ground(s) that no serious burden is present in examining claims 9-15 and 22-55 as well. This is not found persuasive because the search for Group II is not required for Group I.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 9-15 and 22-55 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 6/12/07.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 8, 16, 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 02-292049 [cited in the Information Disclosure Statement filed 7/12/07] (JP '049) in view of US 6,162,589 to Chen et al. (Chen).

JP '049 discloses a method of manufacturing an ink jet recorder, wherein a head body on which many ink discharge holes (i.e. nozzles) are bored and an electrostatic field applying means comprising head side electrodes is provided, which makes ink kept in each ink discharge hole fly from the ink discharge hole to a recording sheet. See the abstract and Figures 1, 2 and 7. However, JP '049 does not disclose forming a photosensitive resin layer into a nozzle shape having a nozzle diameter of less than 30 μm by exposing and developing the photosensitive resin layer.

Chen discloses a method of direct imaging a polymer fluid jet orifice (i.e. nozzle) comprising the steps of applying a photoimageable layer on a substrate, applying electromagnetic energy through a mask to the photoimageable layer, and developing the photoimageable layer, wherein the exemplified orifice diameter is 16 μm . See the abstract; column 4, line 16 to column 6, line 17; and column 7, line 40 to column 8, line 21. It would have been obvious to one skilled in the requisite art to directly image orifices having diameters of less than 30 μm into an photoimageable layer, as taught by Chen, in the process of JP ' 049 because it is taught that directly imaging polymer orifices simplifies manufacturing of a printhead while providing design flexibility and tight orifice dimensional control.

4. Claims 5-7 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 02-292049 (JP '049) in view of US 6,162,589 to Chen et al. (Chen) as applied to claims 1-4, 8, 16, 17 and 21 above, and further in view of EP 1 275 440 [cited in the Information Disclosure Statement filed 3/24/05] EP '440.

The disclosures of JP '049 and Chen are discussed above in paragraph 4. However, neither JP '049 nor Chen disclose utilizing a nozzle diameter of not more than 10 μm .

EP '440 discloses an electrostatic coating device comprising nozzles having an inner diameter in a range of 10 to 100 μm . Furthermore, the inner diameter may be less than or equal to 10 μm depending on the particle size of the charged drop which is to be expelled and the voltage applied. See the abstract, paragraph [0018], [0179] and [0180]. It would have been obvious to one skilled in the requisite art to utilize a nozzle diameter less than or equal to 10 μm , as taught by EP '440, in the process of JP '049 in view of Chen, because it is taught that a nozzle diameter less than or equal to 10 μm is an art-recognized nozzle diameter for use in an electrostatic coating device depending on the particle size of the charged drop which is to be expelled and the voltage applied.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. McPherson whose telephone number is (571) 272-1386. The examiner can normally be reached on Monday through Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

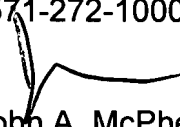
For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



John A. McPherson
Primary Examiner
Art Unit 1756

JAM
8/18/07